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PORTABLE THERMAL FOOD CONTAINER

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This invention relates to a portable food container, and more particularly to portable thermal food containers. Vacuum insulated portable thermal food containers are known, a typical example being shown in U.S. Patent No. 2,662,965, Becker, December 15, 1953. The container shown in the said prior patent represents a practicable and efficient container so far as its temperature holding capacity is concerned but said prior container does not make the most advantageous use of its capacity, especially in respect of the storing of foods in separate containers, and it involves certain constructional details which, for some services, may subject the container to criticism in respect of certain matters of hygiene.

The object of the present invention is to provide a highly efficient portable thermal food container, especially one constructed of metal and vacuum insulated although other materials and forms of insulation may be used; to provide such a container which is very durable, easy to clean, and which resists the collection and holding of foreign matter on its visible surface as well as on its interior surface; to provide a portable thermal food container with a plurality of individual storage pans which will make use of a maximum amount of the storage capacity of the main container; to provide for a container of the character indicated, a set of storage pans which will be easy to remove from the container, which will be easy to clean, and which may be stacked or nested in the container and effectively held in place therein; and, in general, it is the object of the present invention to provide an improved portable food container of the character indicated.

Other objects and advantages of the invention will be understood by reference to the following specification and accompanying drawings (2 sheets) wherein there is described and illustrated a vacuum insulated metal portable food container according to a selected embodiment of the invention.

In the drawings:

Fig. 1 is a cross section on a vertical plane through the axis of a container according to the invention;

Fig. 2 is a side elevation of the upper end portion of the container;

Fig. 3 is a fragmentary cross section on the line 3—3 of Fig. 2;

Fig. 4 is a cross section on a vertical plane through the axis of a pan which is adapted for use within the container; and

Fig. 5 is a perspective illustration of a detail.

The portable food container according to the present invention comprises a main container which is provided with a cover by means of which the main container may be sealed closed, and a stack or nest of pans, each having a cover or lid and which covered pans may be removably seated in and locked in substantially fixed position in the main container when the latter is closed.

The main container comprises inner and outer receptacles 1 and 2 respectively. These receptacles are joined at their upper ends by means of a neck ring 3 which has

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a lower flange portion 4 telescoped over an upper marginal portion 5 of the side wall 6 of the said outer receptacle 2. Said flange portion 4 is suitably secured to said outer container, preferably by continuous seam welding around the entire circumference of the united parts. Said neck ring 3 has a horizontally disposed inwardly extending flange portion 7, and an inner flange 8 which extends upwardly from the inner edge of said horizontal flange. Said inner flange portion 8 terminates in an outwardly rolled upper end edge or bead 9 which defines the mouth of the container. Said flange 8 is provided with a recessed lower part 10 which receives the upper marginal portion 11 of the inner container side wall 12 in substantially coaxial relationship to the upper portion of said neck ring. The mutually lapping parts 10 and 11 are also joined together by a continuous seam weld. The joints between said neck ring and said inner and outer receptacles are made air tight, especially when the container is to be vacuum insulated, and the crevice between the end of said inner receptacle side wall and the upper portion of the neck ring is filled or closed as a part of the welding of the parts together and finished to smoothness in continuity of the inside surface of said inner receptacle wall 12.

The outer receptacle 2 is provided with a plurality of outwardly pressed annular ribs 13 which serve to strengthen said outer receptacle and prevent its inward collapse when the container is vacuum insulated.

The container and its inner and outer receptacles are of generally cylindrical form, the inner receptacle being of smaller diameter than the outer receptacle so as to provide a space 14 between the side walls of the receptacles. This space extends between the bottoms of the receptacles and may be vacuumized to provide effective thermal insulation between the inner and outer containers, or it may be filled with any suitable thermal insulating material.

The lower end of the inner receptacle 1 is closed by a bottom member which has a bottom wall 15 and an annular upwardly extending side wall portion 16 which has its upper marginal portion 17 offset outwardly to provide a recess for receiving the lower marginal portion 18 of the inner receptacle side wall 12 in substantially concentric relationship to the lower side wall portion of the bottom member. The side wall portion 18 is suitably welded continuously around the circumference of the inner container to the bottom member to provide a leak proof sealed joint between these parts, and any crevice between the lower end of the side wall portion 18 and said bottom is filled and closed as a part of the welding operation. This joint is ground or otherwise suitably finished to smooth continuation of the interior surface of the inner wall 12.

The outer receptacle 2 is closed at its bottom by means of a bottom member 19 which has a slightly upwardly arched bottom wall 20 and a depending annular side wall flange 21 which is a snug fit within the lower marginal portion 22 of the side wall of said outer receptacle 2. The joint between the parts 21 and 22 is also continuously sealed as by seam welding around the entire circumference of the container to provide a leak proof connection between the said parts.

The lower or bottom end of the inner receptacle 1 is held in position against radial shifting relative to the outer receptacle 2 by means of a plurality (four in this instance) of supports each comprising a block 23 seated in suitable supporting bracket 24 which is welded to a plate 25 of considerably larger size than the block 23 and bracket 24. The plate 25 is spot welded or otherwise securely fixed to the side wall 6 of the outer receptacle. The provision of the relatively large plate 25 permits spot welding at points suitably spaced to insure